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CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application. Please amend the claims to reflect the following:

1. - 12. (Canceled)

13. (Currently Amended) A dual polarization antenna array, comprising:

a first array of continuous slots formed in a ground plane structure;

a second array of continuous slots formed in the ground plane structure, said second array orthogonal to said first array to define a checker-board pattern of conductive pads in the ground plane structure;

a first feed structure comprising a first periodically spaced set of probe feeds disposed behind the ground plane structure for exciting the first array of slots;

a second feed structure comprising a second periodically spaced set of probe feeds disposed behind the ground plane structure for exciting the second array of slots; and

an electrically conductive back plane structure arranged behind the first and second sets of probe feeds such that the probe feeds are between the ground plane structure and the back plane structure, the back plane structure providing RF shielding;

wherein each of the first and second feed structures comprises a balanced push-pull feed respectively coupled to each of the first and second sets of probe feeds and comprising a pair of feed lines driven in anti-phase.

14 – 15 (Canceled)

16. (Currently Amended) The array of Claim [15] 13, further comprising an impedance transformer for coupling a low impedance transmission structure to a higher load impedance of the continuous slots.

17. (Original) The array of Claim 16, wherein the impedance transformer

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comprises a stripline impedance transformer circuit positioned behind the back plane structure.

18. (Original) The array of Claim 17, wherein the stripline impedance transformer circuit transforms an impedance of 50 ohms into the load impedance of the continuous slot.

19. (Original) The array of Claim 13, wherein said ground plane structure is a planar structure.

20. (Original) The array of Claim 13, wherein the probe feeds each comprise a pair of feed wires each connected to a feed wire portion which is positioned in a general parallel orientation relative to the ground plane structure.

21. (Original) The array of Claim 13, wherein the array operates in a band between 4 Ghz and 16 Ghz.

22. – 36 (Canceled)

37. (Currently Amended) An antenna array, comprising:

an array of continuous slots formed in a conductor plane structure;

a balanced push-pull feed structure for exciting the array of continuous slots, the balanced push-pull feed structure comprising a periodic set of probe feeds disposed behind the [ground] conductor plane structure; and

a back plane structure comprising a conductive layer disposed behind the set of probe feeds and spaced a distance S1 from the conductor plane structure, such that the set of probe feeds is sandwiched between the conductor plane structure and the back plane structure;

wherein the antenna array has an operating band, and wherein said S1 distance is greater than 12% of a mid-band wavelength and less than 60% of the mid-band wavelength.

38 – 40 (Canceled)